RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
UPPER PENINSULA

C. HEIDI GRETHER
DIRECTOR

January 27, 2017

Submission Number: 2NN-5PE0-MT3W
County: Menominee
MiWaters Site: 55-Aquila Resources Inc-Back Forty Project
Project Name: Back Forty
Andrew Boushy
E 807 Gerue Street
Stephenson, MI 49887

Dear Andrew Boushy:

SUBJECT: Correction Request

The Department of Environmental Quality (DEQ), Water Resources Division (WRD), has received and reviewed your application. Based on the review, the application has been determined to be incomplete as received and cannot be further processed until the information requested below has been submitted.

Filing fee

Submit filing fee (payable to the State of Michigan) of $2,000. Please include your submission number, 2NN-5PE0-MT3W, on your payment. Payment may be by credit card or electronic payment through MiWaters at https://miwaters.deq.state.mi.us/miwaters/.

Section 1, Letters

Provide authorization from all property owners for proposed impacts that are not on property owned or under the control of the applicant.

Provide a letter of acknowledgement from all applicable utilities that states they are aware that utilities that are currently running along River Road will have to be rerouted and that this proposal is feasible if all necessary permits are obtained.

Provide a letter from the Menominee County Road Commission that states that they are aware of the proposed realignment of River Road and that this proposal is feasible if necessary permits are obtained.

Provide a letter from the State of Michigan Real Estate Division that states they are aware of the proposed eastern utility corridor across State of Michigan property.

Section 4, Project Plans

Ditch Construction. Provide a detailed figure of the proposed ditch construction in relation to water resources. Provide the location of any discharge points.

Fencing. Provide the location and a detail of the proposed perimeter fence through wetlands. Project plans show one-37 foot crossing through WL-B1 and a wetland crossing through WL-14 of an unknown length. Include a project plan that shows an overview and cross-section of fencing in regulated wetlands and streams. Include the type of materials for construction, how the fence will be supported through wetlands and streams, and the height of the fence above natural ground or water elevations.

River Road Realignment. Project figures shall include the proposed reroute of utilities along River Road.

Figure 4-3: WL 17 and WL A3 are regulated and should be shown as such. WL 2c shapefile has not been updated with the most recent delineation information.

Figure 4-4: WL 17 and WL A3 are regulated and should be shown as such. WL 2c shapefile has not been updated with the most recent delineation information.

Figure 4-10: WL 17 and WL A3 are regulated and should be shown as such. WL 2c shapefile has not been updated with the most recent delineation information.

Section 5, Wetland Delineation and Stream Evaluation

The delineation that has been provided to the WRD measures the following wetland acreages as:

14a: 0.11
14: 6.69
15b: 2.13
B1: 5.02 (includes B1c)
B2: 2.84

The Section 3, Proposed Impact Summary measures the following wetland acreages as:

14a: 0.11
14: 6.70
15b: 2.10
B1: 4.45 (plus B1c, 0.61 ac, which is not included in these impacts)
B2: 2.80

Please clarify or correct these discrepancies. Provide a graph of all the wetlands within the project area and their acreages with the most recent delineation information available.

Section 5-1, Summary of Wetland and Stream Studies.

Include the wetland delineation completed by Stantec in October 2015. This work was completed on WL 2c. All figures throughout the application documents shall include the updated shapefile.

Figure 5-1: WL 17 should be shown as regulated.

Section 5-3, Data Forms (WL-14/14a/15b/B1/B2)

Provide the most recent data forms for WL B1c and WL B3.

Figure 4: Update this figure to show the current data points from the wetland delineation

information provided in Section 5. Update the shapefile for WL 2c and B1c. WL 40/41, B3, 17 and A3 are regulated and should be shown as such. Wetland regulation status and shapefiles should be consistent on all figures throughout the application.

Section 6, Feasible and Prudent Alternative Analysis (Least Environmentally Damaging Practicable Alternative, LEPDA)

5.1, Proposed Action.

Provide additional clarification on the pit perimeter design to minimize impacts to WL 14/14a. The application states that entire acreage of WL-14/14A is being applied for as an impact due to the location of the pit perimeter, proposed pit dewatering activities, and River Road reroute. How does the pit perimeter design minimize impacts to this wetland system? Would an alternative, feasible design potentially reduce resource impacts in other area on the project site?

Provide significant detail on why the general operations area and laydown area are proposed as a direct wetland impact. Address how other upland areas under the control of the applicant, or that may be reasonably obtained by the applicant, may be suitable for these purposes. Provide a detailed accounting of what makes these activities "unavoidable" wetland impacts.

Provide additional detail on how the general operations area and laydown area will be addressed in the reclamation plan.

Indirect impacts must evaluate proposed pit dewatering operations and the resulting cone of depression (drawdown envelope) within the groundwater table created by these operations. Pit dewatering impacts should be accessed through the life of the mine and closure. Provide significant detail on proposed pit dewatering and the impacts this activity will have on groundwater levels in regulated wetlands and streams. Provide significant detail on how dewatering operations may impact wetlands and streams. As previously discussed, all ground water and surface water impacts both within the project area and on adjacent properties must be accessed for changes in the hydrologic regime. Impacts that alter the hydrologic regime six inches or greater may be considered an impact to water resources. All water resources and potential impacts within this cone of depression must be identified and a thorough feasible and prudent alternatives analysis must be conducted for all potential impacts. The applicant must demonstrate that these impacts cannot be avoided or further minimized. All water resource impacts related to pit dewatering activities must be included with this wetlands, lakes and streams application.

Provide a definition for "perched wetland system".

Provide any evidence of a restrictive layer or feature that has been documented in any of the wetlands that are being classified as "perched".

5.2: Alternatives Analysis.

Additional alternatives are addressed in the monitoring and adaptive management plan that are not addressed in the alternatives analysis. These alternatives should be addressed in the alternatives analysis for viability on the site with existing and proposed conditions. Please detail why these alternatives may be suitable for adaptive management but not for site alternatives to avoid and minimize direct and indirect impacts.

Include discussion on why offsite alternatives or portions of the project area that are not within the daily operations are not considered for activities that do not influence the daily operations of the proposed project. These activies may include topsoil stock pile, general overburden

stockpile, laydown area, or some activies proposed for general operations such as vehicle and equipment storage. Alternative site plan layouts should include all of the facilities and operations being proposed on plans that are demonstrating direct or indirect water resource impacts.

5.2.5, Constructability Criteria.

Provide significant detail on the rationale behind the determination of "no impact" to wetlands that have reductions in their watersheds. Provide information on what is determined to be a threshold for impact and how that determination was made. Clear and concise detail must be provided for "no impact" determinations to all regulated wetlands. Extra detail shall be provided for wetlands that stated as being surface water dependent and are proposed to have reductions in watershed areas and surface water.

Provide additional details on the impacts, direct and indirect, proposed by the alternative site plan. Provide significant detail on how the 8% difference in watershed loss for WL 40/41, for 26% to 18% changes the overall impacts to the wetland from "impacted" to "no impact". Provide significant detail on how watershed reductions of 23% for WL B1c and 23% for WL 2b/A1/A3 have been determined to be of "no impact". What is this impact threshold?

Provide detail on how it was determined that the 8% difference in watershed loss for WL 40/41 and the 1% differences in watershed area for WL C1, and WL 2b/A1/A3 equates to exactly the same amount of wetland take being proposed for the preferred alternative which includes filling 3.9 acres of regulated wetland.

Demonstrate the quantity of WL 40/41 that will be impacted by the alternative site plan with a 26% watershed loss. Demonstrate the quantity of WL 40/41 that will be impacted by the preferred site plan with an 18% watershed reduction. Create a figure that shows the comparisons of watershed reductions and wetland impacts between these two site plans.

Provide any information you have available on the NWI wetland "located to the north" and demonstrate its dependence on the 8% watershed difference between the two site alternatives. Provide information on how this wetland would be impacted by the alternative site plan, as alluded to by in the Aquatic Impact Criteria for the Site Plan Layout Alternative.

Clarify this statement: "The increase in lost tributary area for WL-40/41 (and the off-site National Wetland Inventory (NWI) wetland located to the north) is coupled with the same total impacted wetland acreage and stream footage as the preferred alternative."

Demonstrate that WL 40/41 is a perched wetland with no groundwater connectivity.

This section states that the alternative site plan provides for 31.3 acres of area for activities outside of pit development, waste rock and tailings storage, and contact water storage. The preferred alternative layout provides 93 acres for these ancillary activities. Provide detail on how the preferred alternative avoids or minimizes impacts to water resources. Provide additional detail on why the activities described in the preferred alternative occupies three times as much area as an alternative which has been proposed as feasible and reduces direct wetland fill by 3.9 acres.

Provide clarification on how the Alternative Site Plan Layout is the exact same layout that was approved for the Part 632 application however the shapefiles for the topsoil stockpiles, overburden, and soil processing and equipment staging area have been removed. Provide information on why this option was shown as feasible for the Part 632 application and now it not feasible for the wetlands application? Provide detailed information on how the proposed project has changed since the Part 632 permit application was approved with this site plan. Provide a

detailed explanation on why the preferred site plan for the Part 303 application requires an additional 3.9 acres of direct wetland fill that is not demonstrated as being required on the Part 632 site plan or approved as part of the Part 632 final construction plan.

7, Compensatory Mitigation.

Clarify who currently owns the proposed mitigation parcel.

Figure 1-2: Update WL 2c, WL 17 as previously noted.

Figure 5-6: Alternative Site Plan Layout.

State why this plan does not contain all of facility items documented in the alternative analysis. Why were the layers for the for the topsoil stockpiles, overburden, and soil processing and equipment staging area removed? Feasible alternatives should demonstrate how the alternative is feasible.

Section 8: Mitigation plan

Provide additional detail on how the preservation of 4,794 linear feet of the Menominee River mitigates for the impacted stream function and habitat within the proposed project area.

8.1, Goals and Objectives.

Provide additional detail and clarification on Goal 5. Specifically, address the targets for improved aquatic passage.

8.2, Demonstrable Threats.

This section states that the proposed mitigation area is currently held in trust while in Section 6 it was stated that the land is owned by the State of Michigan. Please correct this inconsistency with the current land owner information.

The mitigation plan must address the Typha that has been observed onsite. This should be addressed in the baseline conditions as well as the short and long term management strategies for the proposed mitigation area.

8.8, Performance Standards.

There should be a baseline macroinvertebrate survey taken during a survey period in which measurable results will be expected. This baseline data should be used for comparisons in habitat restoration and functionality as part of the short-term monitoring plan.

Figure 1: Potential Waterways. All wetlands on this figure should be shown as regulated.

Figure 2: Potential Waterways. WL 17, 40/41 should be shown as regulated. Has WL 17 been field confirmed?

Appendix E, Example Conservation Easement.

The document presented in the application is titled Preservation Endowment Fund. Please correct or clarify.

Appendix A

A-1: Indirect Wetland Impacts and Analysis of Peripheral Wetlands

3, Expected Indirect Impacts.

All impacts related to this project must be included as a part of this application.

Provide additional detail on how the collection of non-contact storm water within the watershed for WL-2b will impact the surface water inputs to WL-2b and the water budget for the wetland complex. The water budget for the wetland complex should include the reduction in watershed area for the entire wetland complex, including WL-A1 and WL-A3. The watershed budget should include variables such as the rate and direction of surface water and ground water inputs into the wetland system.

Provide analysis of any impacts of the proposed discharge of non-contact storm water to WL 14a. Will this discharge supplement any of the hydrology lost to pit dewatering operations?

Provide substantial evidence that WL B1c and WL B3 will not be impacted by the reduction in watershed or reductions in groundwater elevations. Provide documentation on the reduction in WL B1c's watershed and the rationale for why this reduction proposes no impact.

4: Analysis of Peripheral Wetlands and Intermittent Stream.

Define "predominantly" as it relates to the inputs to wetland systems. Is this term related to a specific threshold? If so, define that threshold and the factors that led to the determination of "predominant".

WL-B1c is listed as being predominantly surface water inputs but was not included in the Wetland Hydrology Report and there is no correlating data to support this claim. How was this hydrology source determined? Provide any data from installed piezometers, restrictive soil features, or evidence that this wetland is reliant on surface water inputs and has no connection to or inputs from ground water.

WL B3 is listed as having predominantly surface water inputs but has no correlating data to support that claim. How was this hydrology source determined? Provide any data from installed piezometers, restrictive soil features, or evidence that this wetland is reliant on surface water inputs and has no connection to or inputs from ground water.

WL 40/41 is listed as having predominantly surface water inputs but has no correlating data to support that claim. How was this hydrology source determined? Provide any data from installed piezometers, restrictive soil features, or evidence that this wetland is reliant on surface water inputs and has no connection to or inputs from ground water.

The water balance inputs that were obtained from the Oakes and Hamilton publication are not representative of the conditions of the wetland watersheds at the proposed project area and not applicable to the information being requested or required to support the water resource impact claims for this application. The 1974 USGS study was part of a 4,300 square mile study covering nearly 10 counties in Wisconsin and uses an average of the data collected within this study area. There is no information on how this data was collected, the time period for collection, or the specific conditions. Wetland watershed budgets must use site specific data collected over a relevant time period.

Has consideration been given to interception rates within a water balance study?

Runoff should be calculated by the soil classifications within the watershed. Soil mapping should be confirmed by onsite delineation of soils within the watershed boundaries.

This section states that watershed boundaries will not change; however, the application does not demonstrate that the watershed boundaries will not change as a result of the alterations in hydrology during operations and post-closure. Active pumping and the location of the pit may influence the location of the major watershed boundaries in the project area and proposed geologic alterations may influence that location post-closure.

Provide detail on why the existing hydrologic inputs to a wetland system are considered a surplus. Existing hydrologic conditions support existing wetland conditions. Any reduction in hydrology to a wetland system is measured as a deficit to the existing hydrologic conditions. Any alteration to the existing hydrologic conditions of the wetland may impact the existing wetland system. Provide additional documentation and clarification to support the claim that WL B3, B1c, 10/41, C1, 2b, A1 and A3 will not be impacted by the proposed reduction in groundwater elevation and the proposed reduction of wetland watershed areas.

Provide further detail on how groundwater inflow may increase during the closure phase. Does this refer to an increase from operations phase or from pre-construction conditions?

Tables 4-1 through 4-3: Rates of evapotranspiration should be specific to the wetland community type and measured from onsite wetlands over a relevant timeframe. Changes in hydrology during construction, operation and closure is the information that needs to be demonstrated. Any change, specifically a reduction, in water inputs to a system is represented as a deficit to the existing water budget for a wetland system.

Figures 4-6 through 4-10:

These figures should show the changes in ground water elevations from current conditions to maximum drawdown during operations phase. The drawdown elevation or the depth to groundwater should be compared to existing ground elevations such as a current topographic map. The current figures do not present comparative reference elevations.

For all figures that show a depth to water table, provide the date range and method in which this information was collected.

There should be some discussion on why some wetlands that are indicated as mixed surface and groundwater inputs have depths to water tables that are similar or exceed other wetlands that are noted as surface dependent, perched, and/or not connected to groundwater.

Significant discussion should be given to areas where it is demonstrated in these figures that the depth to groundwater will be reduced greater than six inches in wetlands. Further discussion should be given to regulated wetlands that are shown on these figures to experience a reduction in groundwater greater than five feet but have been determined to have “no impact”. Clear and concise detail should be given on how that rationale was made and the determination for the threshold of “impact”.

Appendix B

B-3, 2015 Wetland Delineation Supplemental Information. This revised delineation information for WL 2c should be included on all project figures that show wetland delineation boundaries.

Appendix C

C-4, Cut-off Wall Memorandum.

Figure 1: Figure should include the 100-year flood elevation. Provide information on who is proposing this alignment configuration and roadway design.

C-6, Invasive Species Management Plan.

This plan should address non-native and hybridized Typha species that are prone to create monocultures in wetland areas.

C-7, Mussel Relocation Plan.

Mussel Relocation Site Selection

The last bullet "Zebra mussels (Dreissena polymorpha) and Quagga mussels (D. rostiformis) are absent from the project site." Additional clarification is needed: Badra 2010 mentions zebra mussels present at Site 5 which is a proposed location for relocation. The 2014 Stantec report does not mention zebra or quagga mussels at all in their report. Were either zebra mussels or quagga mussels observed at the outfall location? If so, you don't want to transport the mussels to a new location where there's no zebra or quagga mussels.

Provide additional clarification on the 20 minute timed searches at potential relocation sites. What is the span of this search?

"Site 5 was surveyed in 2008 and 2009 (Badra 2010)." Site 5 needs to be re-evaluated again per Michigan Mussel Protocols- Any survey older than 5 years old is considered outdated.

The current plan states: "Stantec will prepare a brief report summarizing the site selection survey for agency review". The site selection survey should be a detailed report, not "brief". Water depth, density and visual estimates of % areal coverage of macrophytes, woody material, and substrate composition must be reported. Unsuitable habitat must also be reported. Age structure will be submitted in the report as well. A detailed map must also be included in the report. Photo vouchers of mussels must also be submitted. Photographs should include a close-up view of the umbo and one of the valve. Any questionable species should include photographs of the left valve, right valve, and dorsal view as well to provide adequate reference for verification. Detailed list of required information to be reported is under Appendix B of the updated Michigan FWM Survey Protocols and Relocation Procedures. See attached.

Metrics for the assessment of communities should also include density. The proposed density for each location must be included within the site selection report.

Stantec is also required to notify MDNR Fisheries of preliminary survey results (e.g., species detected) within 5 days of completion of the survey. It needs to be explicitly stated in the relocation plan that no mussels are to be moved without prior authorization from the Michigan DNR Fisheries Division.

Mussel Relocation

"The final outfall location at the Back Forty Mine in not known at this time". The Joint Permit Application and Project Plans reflect 1 outfall site. Please update to reflect the outfall location has been chosen.

Comment: Stantec's freshwater mussel survey at the proposed outfall locations occurred in 2014. Keep in mind timeline of project- 5+ year old data is considered outdated. May have to

resurvey depending on timeline.

Comment: Need to add an acceptable justification for not avoiding the area where mussels will be impacted.

Please clarify (with a map and dimensions) as to what specifically is the ADI, mixing zone and buffer zone. Is the buffer zone in addition to the mixing zone? Also, the mixing zone calculations (under Attachment C) say 125 feet below downstream is needed for levels of lead to be less than 10Ug/L. The current ADI, mixing zone, buffer zone (from my understanding) does not go down that far.

A report needs to be provided to the MDNR within 30 days of completion of the relocation and subsequent monitoring activities. Refer to Appendix B in the updated and attached "Michigan Freshwater Mussel Survey Protocols and Relocation Procedures: January 2017 Draft".

Post-Relocation Monitoring

Update from the Michigan Protocols- the first post-relocation survey that is required must occur within 30-45 days after relocation. 90 days is no longer within the suggested timeframe. Additionally, if high mortality (>25%) is observed in the first follow-up survey, then it needs to be reported to MDNR to discuss and determine what follow-up action may be necessary. For the 1-2 years post relocation survey, if high mortality is observed (>50%) then it also needs to be reported to MDNR to discuss and determine what follow-up action may be necessary. Again refer to Appendix B of Michigan protocols of what needs to be in the report.

Relocation monitoring shall be timed to coincide with favorable seasonal conditions. Monitoring in cold weather may increase risks to mortality.

Attachment A

Please clarify what "Alternate survey site" is.

Attachment C

Re: November 14, 2016 letter, second paragraph "six constituents were identified in research as potentially harmful to mussels". Provide additional details on the research. Include a reference section that provides a bibliography of supporting data referenced in this document.

Freshwater mussels are the most sensitive animals ever tested to the effects of ammonia. Why isn't ammonia listed as one of these "six constituents"? Specifically describe what "harmful to mussels" is. Is harmful describing habitat degradation, reproductive issues, death? This should be clarified. If harmful is a threshold of tolerance of degree of impacts, that should be identified and sufficient detail should be provided to support the rationale of establishing a threshold for "harm".

Table 2 calculations. Where did the number "2.994 ft/s for instream velocity" come from? How is "C* found to be 58"?

Table 2. Table 1 lists a significant number of minerals and compounds that have NPDES thresholds but Table 2 only addresses six of those. Do we have a list of what is anticipated to be discharged at this location and at what concentration? Table 2 demonstrates that the threshold for harm is commonly below the NPDES requirements for discharge. We would like to see a list of the effluent that is expected at this site during operation and the harmful thresholds compared to that list. The literature source(s) should be cited. Please include a summary of anticipated

effect to the mussel populations that have been surveyed at this location and demonstrate a practical range of where these effects will be located.

General Comment: Please revisit the updated Michigan Survey Protocols and Relocations January 2017 draft for any other updates. Again this is a draft and not a final version. A final version will be submitted to Stantec upon completion.

Re: "if more than 1,000 animals are collected from the salvage area, we request permission to continue marking only the State listed species."

MDNR Fisheries Division Comment: Approved.

Re: "We request permission to mark up to 500 mussels at each relocation site to aid in statistical analyses of the data in the post-relocation monitoring phase of the project."

MDNR Fisheries Division Comment: Approved.

MDEQ Comment: Anytime reports document mussel identification, a representative photo should be taken to confirm the ID.

C-11, Wetland Hydrology Report.

The executive summary states that field data was used to evaluate wetland water sources for the eight wetlands with piezometer nests. How we the other wetlands evaluated for water sources?

The executive summary states that WL 2b relies on groundwater contributions and "some portion of their water budget may be susceptible to indirect impacts from groundwater drawdown associated with pit dewatering". Provide significant detail on the potential for impacts from pit dewatering. Impacts should include any reduction or increase to wetland hydrologic regimes that may result in that changes the water elevation within the wetland system

Provide detail on why piezometer information was collected and is being presented for only one growing season. Has any additional piezometer information been documented? Is any additional piezometer data available that provides information on hydrology from the past five years?

4.1, Hydrostratigraphic Units.

This sections states: "Available stratigraphic information at the locations of the piezometer nests does not suggest widespread potential for a perched or isolated wetland water table system" and "At PZ-9, 1.2 m of organic silt overlies sand; this is the most substantial thickness of potentially isolating soil observed in any of the wetland borings" and "The hydrostratigraphic data did not provide conclusive information on wetland water sources." Provide significant detail and analysis on how the determination of "perched" wetlands was concluded in Appendix A-1, Indirect Wetlands Analysis. Provide additional analysis on statements that are supported by hydrostratigraphic data.

4.2.1, Conceptual Site Model.

This section states "The groundwater contour maps indicate the groundwater within the Quaternary aquifer flows radially outward from a local groundwater high located near wells MW-1 and FMW-4…" Provide detail on if and how this information has been used to determine wetland hydrologic inputs pre-construction and during operation.

This section also states: "The wetlands in the Project Area appear to occupy topographic lows or ground slope positions where the landscape intersects the water table." Provide additional clarification on how this statement supports the conclusions outlined in Appendix A-1 that many of the wetlands onsite are perched and not connected to the water table. Does this analysis of landscape position relate to statements made in Appendix A-1 on wetlands being perched because of their landform position?

4.2.2, Vertical Hydraulic Gradients.

Negative hydraulic gradients indicate a ground water flow to wetlands. Positive hydraulic gradients indicate a wetland flow to ground water. PZ-1, 2, 5, 6, 10, 11 and 13, which are all the wetland nested piezometers within the project area, recorded data that with both negative and positive values. Please detail how this supports the conclusion presented in Appendix A-1 that many of the wetlands within the project area are perched.

4.2.2.6, PZ-10 and PZ 10A.

PZ 10 and PZ 10A demonstrated a negative hydraulic gradient in the spring of 2012. Please provide additional detail and analysis that compares the negative gradients recorded at PZ-13 and PZ-13A with the negative gradients at PZ-10 and PZ-10A. This analysis should include seasonal variations in the water table using site wide data and the potential for connectivity of these wetland systems through both surface and ground water inputs. This analysis should include discussion on how negative hydraulic gradients will be impacted within WL B1 and WL B2 by pit dewatering operations. This discussion should also include why WL B1 and B2 have been determined to be supplied by surface water.

4.2.2.7, PZ-11 and PZ-11A.

This section states that "the water supply for wetland WL 2b is derived from ground water inflow, direct precipitation, and runoff. Please detail how this statement supports the conclusions detailed in Appendix A-1 that WL 2b will not be impacted by groundwater reductions and a 22% reduction in watershed area.

4.2.2.9, PZ-13 and PZ-13A.

This section states that WL B2 has periods of ground water discharge to the wetland. Please detail how this information supports the conclusions detailed in Appendix A-1. Provide additional details on how the proposed pit dewatering will alter the ground water inputs to this wetland system. Include additional analysis on the connectivity of WL B2 with WL B1 and WL B1c and the potential for connectivity with WL B3.

4.2.4, Relationships with Precipitation.

This section states that there was no correlation between wetland hydrology and individual or cumulative precipitation events and that the dominant trends in wetland water elevation were correlated with seasonal cycles. It further states that "…the relationship between water-level and precipitation was not conclusive in assessing wetland water sources." Provide additional detail on how wetland water sources were determined. Specifically, how were wetlands determined to be surface water or ground and surface water dependent?

4.5, Landscape position, Water Table Configuration, and Depth to Groundwater.

The depth to water table was taken as the depth from existing land surface elevation and the water table that was measured in May 2012. Specify why the depth to water table was not

measured to the seasonally high water table.

5, Conclusions.

Provide additional clarification on how the Cowardin et al (1979) water regime was used to provide evidence for identification of wetland water sources.

Provide a definition for "predominantly" in the context in which it is used to summarize wetland water inputs. If this term is a threshold, please provide what percentage or level is required to meet the threshold of "predominantly". Provide analysis on how this threshold was determined.

Table 4-1: Provide additional clarification on the Landscape and Water Table Position information. How was this information collected? What is the variable that accounts for the large fluctuations in the water table depth? How was the water regime determined? It appears that there may be some inconsistencies with the water regime modifiers that were assigned to wetlands within the project site and how the water regimes are described in Cowardian et al (1979).

Table 4-1: WL 2c. Temporarily flooded wetlands typically do not have "frequent large reversals" of vertical hydraulic gradients. Describe how the water regimes were determined for wetlands that did not have measurements of hydraulic gradients. Include detailed descriptions and supporting evidence of the water regimes for WL B1, WL B2, WL B3, WL B1c, and WL 40/41.

Figure 3-1 through 3-4: Provide additional detail on survey periods for the information provided in these figures. Are the ground water elevations taken from one discrete measurement or averaged over a time period of active monitoring? Include detail on why only one figure represents ground water elevations during the growing season.

C-12, Proposed Monitoring Plan and Adaptive Management

5, Adaptive Management.

Adaptive management options are identified that have not been addressed in the Feasible and Prudent Alternatives Analysis for direct or indirect impacts. These options should be examined as feasible and prudent alternatives to avoid and minimize direct and indirect wetland impacts and then be further expanded as part of an adaptive management strategy.

C-13, Endangered, Threatened species, and Species of Special Concern Summary.

Provide additional details on survey methods and timing for the Lake sturgeon surveys completed in the Menominee River.

Additional information and/or filing fees may be required upon further review of your application. Should we not receive the requested information from you within 30 days of this letter, we will consider your application as withdrawn and will close your application. Fees are not refundable on applications once a decision has been made or if an action has been taken, such as closing an application due to no or incomplete response to a correction request letter, posting a public notice, or conducting a site visit. A new application may be submitted, but fees are not transferable.

If you have any questions regarding this letter or your application, please contact me at 906-236-0380 or WilsonK17@michigan.gov. Send the requested information to me at DEQ, WRD, Upper Peninsula District Office, 1504 West Washington Street, Marquette, Michigan 49855. Please include your submission number, 2NN-5PE0-MT3W, in your response. The status of

your application can be tracked online at https://miwaters.deq.state.mi.us/miwaters/.

Sincerely,

Kristi Wilson
Upper Peninsula District Office
Water Resources Division

cc: Melaine Burdick, USEPA
Jennifer Johnson, MDNR
Mike Pennington, MDEQ
Ginny Pennala, MDEQ
Foth, Agent
King and MacGregor, Agent